

$$\checkmark \textcircled{1} \quad 4x + 2y - z = 21$$

$$\checkmark \textcircled{2} \quad -x - 2y + 2z = 13$$

$$\textcircled{3} \quad 3x - 2y + 5z = 70$$

Add  $\textcircled{1} + \textcircled{2}$

$$\begin{array}{r} \textcircled{+} \quad 4x + 2y - z = 21 \\ \quad -x - 2y + 2z = 13 \\ \hline \end{array}$$

$$\textcircled{4} \quad 3x + z = 34$$

Add  $\textcircled{1} + \textcircled{3}$

$$\textcircled{+} \quad \begin{array}{r} 4x + 2y - z = 21 \\ 3x - 2y + 5z = 70 \\ \hline \end{array}$$

$$\textcircled{5} \quad 7x + 4z = 91$$

Use  $\textcircled{4}$  and  $\textcircled{5}$

$$\begin{array}{l} -4(3x + z = 34) \rightarrow -12x - 4z = -136 \\ 7x + 4z = 91 \rightarrow \textcircled{+} \quad 7x + 4z = 91 \\ \hline \end{array}$$

$$-5x = -45$$

$$\boxed{x = 9}$$

Use either  
 $\textcircled{4}$  or  $\textcircled{5}$  to  
find  $z$

$$3x + z = 34$$

$$3(9) + z = 34$$

$$27 + z = 34$$

$$\boxed{z = 7}$$

$$\boxed{\begin{array}{l} x = 9 \\ y = -4 \\ z = 7 \end{array}}$$

Use either  $\textcircled{1}$ ,  $\textcircled{2}$ , or  $\textcircled{3}$   
to find  $y$

$$4x + 2y - z = 21$$

$$4(9) + 2y - (7) = 21$$

$$36 + 2y - 7 = 21$$

$$\begin{array}{r} 29 + 2y = 21 \\ -29 \quad -29 \\ \hline \end{array}$$

$$2y = -8$$

$$\boxed{y = -4}$$